Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in this Application. Note that this listing of claims is in a proper format for a reissue application, according to 37 CFR 1.173. The listing of claims has been amended to reference the originally issued claims of U.S. Patent No. 5,865,846, of which the present application is a continuation reissue.

1. (Original) A method of endoprosthetic discectomy surgery comprising the steps of receiving information about the size, shape and nature of a patient's damaged natural spinal vertebral bodies and discs from radiographs, CT and/or MRI scans or other imaging devices specifically determining the anterior-posterior and lateral dimensions of each involved vertebral body, the vertical height of the anterior aspect of each involved vertebral and/or proximate vertebral body, and the vertical height of the mid-portion of the involved and proximate normal intervertebral disc spaces, thereafter constructing one or more prosthetic vertebral body units and prosthetic disc units in conformity with the received information, each prosthetic disc unit including confronting L-shaped concaval-convex elements and a resilient body interposed between the concaval-convex elements; and an endoprosthetic vertebral body interposed between and engaging the adjacent disc units; and thereafter implanting the completed and conformed construction in the patient's spine.

2. (Original) A method according to claim 1 including the step of constructing a plurality of prosthetic disc units and further including the step of attaching the disc units to an endoprosthetic vertebral body prior to the step of supplying the assembly to the surgeon.

3. (Original) A method according to claim 1 further including the steps of surgically milling spinal bone surfaces with concave surfaces to receive confronting convex surfaces of the concaval-convex elements, and installing at least one disc unit having concaval-convex elements with said convex surfaces in the patient's spine.

4. (Original) A method of surgery comprising the steps of removing a vertebral disc from a patient's spine, forming holes at precisely predetermined locations in bone structure adjacent the location of the removed disc, tapping the holes to form a female thread in each hole, and threadably implanting an anchor into each tapped hole, thereby creating reference points located precisely with respect to the patient's spine, forming concave surfaces in adjacent spinal bone, and inserting between the formed bone surfaces a vertebral disc endoprosthesis including confronting concaval-convex supports, each support having an exterior convex surface adapted to mate with the adjacent formed concave spinal bone surface, the endoprosthesis further including a resilient body element interposed between the concaval-convex supports, and thereafter affixing the concaval-convex supports to the adjacent bone.

5. (Original) A method of surgery according to claim 4 further including the step of temporarily locating a bone surface milling jig at the site of the removed vertebral disc by means of said anchors prior to implanting said disc endoprosthesis.

6. (Original) A method of surgery according to claim 4 further including the steps of attaching a screw to each concaval-convex support and screwing said screw into the implanted anchor.

7. (Original) A method of surgery according to claim 4 further comprising the steps of identifying a damaged resilient nucleus body element or annular gasket in an implanted endoprosthesis, removing said damaged nucleus body element or annular gasket from the endoprosthesis and inserting a new, undamaged nucleus body element or annular gasket into the endoprosthesis without removing the concaval-convex supports from the patient's spine.

8. (Original) A method of spinal surgery comprising the steps of forming mounting holes in one or more vertebral bodies of a patient's spine; utilizing said mounting holes to mount a bone mill on a patient's spine; milling confronting bone surfaces on and in the patient's spine to a predetermined surface shape; removing said mill; and thereafter mounting a vertebral disc endoprosthesis having a predetermined outer surface shape by means of the original mounting holes so that outer surfaces of the vertebral disc endoprosthesis mate precisely with the previously milled bone surfaces.

9. (Original) A method of endoprosthetic discectomy surgery comprising the steps of receiving information about the size, shape and nature of a patient's involved and proximate normal natural spinal vertebral bodies and natural spinal vertebral discs from known imaging devices, thereafter constructing at least one vertebral disc endoprosthesis comprising a resilient disc body and concaval-convex elements at least partly surrounding the resilient disc body, removing at least the involved, natural spinal discs from the patient's spine, forming concave surfaces in adjacent spinal bone, and thereafter implanting the vertebral disc endoprosthesis in the patient's spine.

10-12, 14-17, and 19-29. (Cancelled)

13. (Previously Presented) A method of surgery comprising:

forming concave surfaces in endplates of confronting vertebral bodies;

inserting between the formed concave surfaces an intervertebral disc endoprosthesis wherein the intervertebral disc endoprosthesis comprises: L-shaped supports wherein each of the L-shaped support comprises an exterior convex surface adapted to mate with one of the formed concave surfaces; and a resilient body interposed between the L-shaped supports; and

implanting at least one anchor in at least one of the confronting vertebral bodies, wherein the implanting is located in an anterior surface of the at least one of the confronting vertebral bodies.

18. (Previously Presented) A method of surgery comprising:

implanting at least one anchor in an anterior surface of at least one of confronting vertebral bodies;

removing damaged disc material;

forming concave surfaces in the endplates of the confronting vertebral bodies; and

inserting between the formed concave surfaces an intervertebral disc endoprosthesis comprising: confronting supports, each support having an exterior convex surface adapted to mate with one of the formed concave surfaces; and a resilient body interposed between the supports.

30. (Previously Presented) A method of surgery comprising:

forming partially hemispherical surfaces in endplates of confronting vertebral bodies, the partially hemispherical surfaces being different from a natural surface of the endplates; and

inserting between the formed partially hemispherical surfaces an intervertebral disc prosthesis comprising confronting supports, each support having a partially hemispherical exterior surface adapted to mate with one of the formed partially hemispherical surfaces, wherein the supports are capable of movement relative to each other after the prosthesis has been inserted between the formed partially hemispherical surfaces.

31. (Previously Presented) The method of surgery according to claim 30, wherein the partially hemispherical surfaces are formed using a milling jig.

32. (Previously Presented) The method of surgery according to claim 30, further comprising:

prior to forming the partially hemispherical surfaces in the vertebral body endplates, implanting at least one anchor into a hole having a predetermined position in an anterior surface of at least one of the confronting vertebral bodies; and

affixing a bone surface milling mechanism to the at least one anchor.

33. (Previously Presented) A method for inserting an intervertebral disc prosthesis having a first and second surface, the method comprising:

after removal of an intervertebral disc, forming a first indention in a first endplate of a first vertebral body, the first indention having a middle portion and a circumferential rim such that the middle portion is deeper into the first vertebral body than any part of the circumferential rim;

fixedly mating the first surface to the first indention of the first endplate of the first vertebral body, the first surface having a shape that conforms to the first indention; and

fixedly mating the second surface to a second vertebral body.

34. (Previously Presented) The method of claim 33 wherein the first indention is formed by attaching a milling jig to either the first or second vertebral body and milling the first indention.

35. (Previously Presented) The method of claim 33 wherein the first indention is concave about multiple planes and the first surface of the intervertebral disc prosthesis has a convex shape.

36. (Previously Presented) The method of claim 33 wherein the first and second surface are capable of relative movement after being mated to the first and second vertebral bodies, respectively.

37. (New) The method of claim 33 further comprising:

forming a second indention in a second endplate of the second vertebral body, the second indention having a middle portion and a circumferential rim such that the middle portion is deeper into the second vertebral body than any part of the circumferential rim.

38. (New) A method of surgery comprising:

forming a first artificial surface in an endplate of a first vertebral body, the first artificial surface being arcuate in multiple planes;

inserting a motion-preserving disc prosthesis into an intervertebral space adjacent to the formed first arcuate surface; and

positioning a first portion of the inserted prosthesis against the formed first surface of the first vertebral body, wherein the first portion has an exterior configuration adapted to mate with the formed first surface.

39. (New) The method of surgery of claim 38 further comprising:

forming a second arcuate surface in an endplate of a second vertebral body opposing the first vertebral body; and

positioning a second portion of the inserted prosthesis against the formed second arcuate surface of the second vertebral body, wherein the second portion has an exterior configuration adapted to mate with the formed second arcuate surface.

40. (New) The method of surgery of claim 39 further comprising:

attaching a milling jig to at least one of the first and second vertebral bodies for milling the arcuate surfaces in the endplates of the first and second vertebral bodies.

41. (New) A method of surgery comprising:

attaching a milling jig to a vertebral body;

milling an endplate of the vertebral body to a relatively shallow thickness as compared to an overall thickness of the vertebral body, with a concave shape of the milled endplate having a depth less than its width and forming a surface different from a natural surface of the endplate; and

positioning a motion-preserving implant into a disc space adjacent the milled endplate, the implant have a surface that conforms to the milled endplate.

42. (New) The method of claim 41 wherein the shape is concave about multiple planes.

43. (New) A method of surgery comprising:

removing a spinal disc between confronting vertebral bodies;

forming concave surfaces in the endplates of the confronting vertebral bodies, and

inserting between the formed concave surfaces an intervertebral disc endoprosthesis, comprising:

(1) confronting concaval-convex supports, each support having an exterior convex surface adapted to mate with one of the formed concave surfaces, and

(2) a resilient body element interposed between the concaval-convex supports.

44. (New) A method of endoprosthetic discectomy surgery comprising:

receiving information about the size, shape and nature of a patient's involved natural spinal vertebral bodies and natural spinal vertebral discs from imaging devices,

removing at least the involved, damaged natural spinal disc material from the patient's spine,

forming concave surfaces in adjacent spinal vertebral bodies, the concave surfaces being concave about multiple planes, and

implanting an intervertebral disc endoprosthesis comprising a resilient disc body and concaval-convex elements at least partly surrounding the resilient disc body in the patient's spine.